

CLAIMS

What is claimed is:

- Sub A3
- 1 1. An apparatus comprising:
- 2 an internal test bus (ITB);
- 3 a plurality of deskew clusters coupled to the ITB,
- 4 wherein the plurality of deskew clusters each include a
- 5 deskew controller;
- 6 an integrated test controller (ITC) coupled to the ITB;
- 7 and
- 8 a debug unit coupled to the ITC;
- 9 wherein the ITC generates a single global control signal and
- 10 the deskew controller generates a first local command signal.
- 1 2. The apparatus of claim 1, wherein the plurality of
- 2 deskew clusters further comprise a plurality of deskew
- 3 buffers and a regional clock driver (RCD).
- 1 3. The apparatus of claim 1, further comprising a second
- 2 local command signal, wherein the single global control
- 3 signal and one of the first local command signal, the second
- 4 local command signal, and both the first local command signal
- 5 and the second local command signal provide a distributed
- 6 test control scheme for integrated circuits including debug
- 7 and testability operations.
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- 1 4. The apparatus of claim 1, wherein the first local
- 2 command signal is a snapshot instruction and the second local

3 command signal is a shift instruction.

1 5. The apparatus of claim 4, wherein a snapshot instruction
2 can be issued at a first time period and a shift instruction
3 can be issued at a second time period, and results from the
4 snapshot instruction can be shifted by the shift instruction
5 after a third period of time.

1 6. A method comprising:

2 generating a single global control signal in an
3 integrated test controller;

4 decoding the single global control signal in a deskew
5 controller;

6 generating a first local command signal corresponding to
7 the single global control signal;

8 distributing the first local command signal to a
9 regional clock driver (RCD); and

10 performing one of a debug operation and a testability
11 operation on an integrated circuit by using the single global
12 control signal and the first local command signal.

1 7. The method of claim 6, further comprising generating a
2 second local command signal corresponding to the single
3 global control signal.

1 8. The method of claim 7, wherein one of the first local
2 command signal is a snapshot instruction and the second local
3 command signal is a shift instruction.

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1 9. The method of claim 8, further comprising issuing a
2 snapshot instruction at a first time period;

3 issuing a shift instruction at a second time period; and
4 shifting results from the snapshot instruction by the shift
5 instruction after a third period of time.

1 10. The method of claim 6, further comprising triggering the
2 debug operation after a variable time period.

1 11. A program storage device readable by a machine
2 comprising instructions that cause the machine to:

3 generate a single global control signal in an integrated
4 test controller;

5 decode the single global control signal in a deskew
6 controller;

7 generate a first local command signal corresponding to
8 the single global control signal;

9 distribute the first local command signal to a regional
10 clock driver (RCD); and

11 perform one of a debug operation and a testability
12 operation on an integrated circuit by using the single global
13 control signal and the first local command signal.

1 12. The program storage device of claim 11, wherein the
2 instructions further cause the machine to:

3 generate a second local command signal corresponding to

4 the single global control signal.

1 13. The program storage device of claim 12, wherein the
2 first local command signal is a snapshot operation and the
3 second local command signal is a shift operation.

1 14. The program storage device of claim 13, wherein the
2 instructions further cause the machine to: issue a snapshot
3 operation at a first time/period;

4 issue a shift operation at a second time period; and shift
5 results from the snapshot operation by the shift operation
6 after a third period of time.

1 15. The program storage device of claim 11, the instructions
2 further cause the machine to: trigger the debug operation
3 after a variable time period.

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

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